

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional)

hunzeb01.007

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)]

on 1/6/2008

Signature /Gordon E. Nelson/Typed or printed name Gordon E. Nelson

Application Number

10/018,696

Filed

12/13/2001

First Named Inventor

Brian A. Hunter

Art Unit

3693

Examiner

Khattar, Rajesh

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).

Note: No more than five (5) pages may be provided.

I am the



applicant/inventor.



assignee of record of the entire interest.

See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.
(Form PTO/SB/96)



attorney or agent of record.

Registration number 30,093

attorney or agent acting under 37 CFR 1.34.

Registration number if acting under 37 CFR 1.34 _____

/Gordon E. Nelson/

Signature

Gordon E. Nelson

Typed or printed name

978-948-7632

Telephone number

January 7, 2008

Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required.
Submit multiple forms if more than one signature is required, see below*.

*Total of 1 forms are submitted.

This collection of information is required by 35 U.S.C. 132. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

**NOTICE OF APPEAL FROM THE EXAMINER TO
THE BOARD OF PATENT APPEALS AND INTERFERENCES**

Docket Number (Optional)

hunzeb01.007

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)]
on _____ Filed by EFS

Signature _____

Typed or printed
name _____

In re Application of
Brian A. Hunter, et al.

Application Number
10/018,696

Filed
12/13/2001

For **Resource allocation techniques**

Art Unit
3693

Examiner
Khattar, Rajesh

Applicant hereby **appeals** to the Board of Patent Appeals and Interferences from the last decision of the examiner.

The fee for this Notice of Appeal is (37 CFR 41.20(b)(1))

\$ **\$500.00**

☒ Applicant claims small entity status. See 37 CFR 1.27. Therefore, the fee shown above is reduced by half, and the resulting fee is:

\$ **\$250.00**

☐ A check in the amount of the fee is enclosed.

☐ Payment by credit card. Form PTO-2038 is attached.

☐ The Director has already been authorized to charge fees in this application to a Deposit Account. I have enclosed a duplicate copy of this sheet.

☒ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. **501315**. I have enclosed a duplicate copy of this sheet.

☒ A petition for an extension of time under 37 CFR 1.136(a) (PTO/SB/22) is enclosed.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

I am the

☐ applicant/inventor.

/Gordon E. Nelson/

Signature

☐ assignee of record of the entire interest.

See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.
(Form PTO/SB/96)

Gordon E. Nelson

Typed or printed name

☒ attorney or agent of record.

Registration number **30,093****978-948-7632**

Telephone number

☐ attorney or agent acting under 37 CFR 1.34.

Registration number if acting under 37 CFR 1.34. _____

01/07/2008

Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.

☒ *Total of **11** forms are submitted.

This collection of information is required by 37 CFR 41.31. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
(hunzeb01.007)

5 **Applicant:** Hunter, et al. **Confirmation No.:** 5130

Application No: 10/018,696 **Group Art Unit:** 3693

Filed: 12/13/2001 **Examiner:** Khattar, Rajesh

10 **Title:** *Resource allocation techniques*

15 Commissioner for Patents
 Alexandria, VA 22313-1450

Brief for a Pre-appeal Brief Conference

Background

20 This application is the U.S. National Stage of PCT/US01/00636, filed 9 January 2001 and
 claiming priority from U.S. Provisional Patent Application 60/175,261, filed 10 January
 2000. The claims under final rejection are claims 19-26. In rejecting the claims,
 Examiner combined the publication, Kaplan, Paul, "Asset allocation models using the
 Markowitz approach", having a date of 1998 (hereinafter "Kaplan") with U.S. Patent
25 6,321,212, Lange, *Financial products having a demand-based, adjustable return and*
 trading exchange therefor, having a filing date of November 24, 1999 (hereinafter
 "Lange") to reject claims 19, 20, and 25-26 and combining Kaplan, Lange, and Ross,
 Westerfield, and Jaffe, *Corporate Finance*, fourth edition, 1996, Chapter 10, "Return and
 Risk" (hereinafter "Corporate Finance") to reject the remaining claims.

30 **Issue**

 The issue between Examiner and Applicants is whether Lange discloses claim 1's
 limitation,

35 in the linear optimization program, using a real option function to
 determine valuation for each asset class over the period of time
 for a particular allocation of the funds to the asset class

Resolving the issue involves interpretation of the meaning of "real option" in Lange and in Applicants' Specification. As will be shown in the following, in Lange, the term "real option" means a *qualitative* technique for analyzing investment and capital funding choices faced by firms; In Applicants' Specification, the term "real option" means a

5 *quantitative* technique for allocating investment funds among asset classes. *Because* Applicants' real option technique is *quantitative*, the limitation can include a "real option *function*". Further, *because* Lange's real option is *qualitative*, Lange cannot and does not disclose the limitation's "real option function".

10 **Real options in Applicants' Specification**

Real options are explained at page 2, lines 11-21 of Applicants' Specification as follows:

The advantage of the real option model is that it takes better account of uncertainty ... because things are uncertain, the risk and return for an action to be taken at a future time is constantly changing. This fact in turn

15 gives value to the right to take or refrain from taking the action at a future time. Such rights are termed *options*. Options have long been bought and sold in the financial markets. The reason options have value is that they reduce risk: the closer one comes to the future time, the more is known about the action's potential risks and returns. Thus, in the real option

20 model, the potential value of a resource allocation is not simply what the allocation itself brings, but additionally, the value of being able to undertake future courses of action based on the present resource allocation.

25 A technique for calculating the value of a real option using the Black-Scholes formula is presented at page 7, line 26-page 8, line 12. Page 8, lines 13-16 further show how an optimization program can be used to maximize the real option value of a portfolio.

As is abundantly clear from the foregoing, the real options of Applicants' Specification

30 have prices, i.e., they have *quantitative values*. Indeed, it is *because* real options have quantitative values that a function which computes real option values can be used as the objective function in an optimization program.

"Real options" in Lange

Lange is a patent with 112 columns of Specification. The only mention of real options in the patent is at col. 57, line 54-col. 58, line 8, which is the location cited by Examiner in his rejection. What Lange is principally concerned with is creating and establishing a market for what Lange terms "demand based adjustable return contingent claims" or DBARs. As set forth at col. 7, lines 19-30 and col. 8, lines 18-28, a DBAR contingent claim is a claim which has states that depend on an observable event. The DBARs have fixed prices and are sold in groups; a purchaser pays the fixed price and selects a state in which the claim will pay the purchaser. When the observable event occurs, the state of the DBARs resulting from the observable event is determined and all of the money received for the DBARs in the group is paid out to the holders of the DBARs who selected that event.

At the location cited by Examiner in his rejection of claim 19, Lange describes "real option analysis" (Lange, col. 57, line 54-col. 58, line 8).

Investment and capital budgeting choices faced by firms typically involve inherent economic risk (e.g., future demand for semiconductors), large capital investments (e.g., semiconductor fabrication capacity) and timing (e.g., a decision to invest in a plant now, or defer for some period of time). Many economists who study such decisions under uncertainty have recognized that such choices involve what they term "real options." This characterization indicates that the choice to invest now or to defer an investment in goods or services or a plant, for example, in the face of changing uncertainty and information, frequently entails risks similar to those encountered by traders who have invested in options which provide the opportunity to buy or sell an underlying asset in the capital markets. Many economists and investors recognize the importance of real options in capital budgeting decisions and of setting up markets to better manage their uncertainty and value. Natural resource and extractive industries, such as petroleum exploration and production, as well as industries requiring large capital investments it such as technology manufacturing, are prime examples of industries where *real options analysis* is increasingly used and valued. (emphasis added)

Clearly, the "real options" in Lange's "real options analysis" are different from the "real options" described at page 2, 11-21 of Applicants' Specification. Where the difference lies becomes clearer on reading the next paragraph of Lange's Specification, which describes how DBARs can be used in real options analysis:

Groups of DBAR contingent claims according to the present invention can be used by firms or firms within a given industry to better analyze capital budgeting decisions, including those involving real options. For example, a group of DBAR contingent claims can be established which provides hedging opportunities over the distribution of future semiconductor prices. Such a group of claims would allow producers of semiconductors to better hedge their capital budgeting decisions and provide information as to the market's expectation of future prices over the entire distribution of possible price outcomes. This information about the market's expectation of future prices could then also be used in the real options context in order to better evaluate capital budgeting decisions. (Lange, col. 58, lines 9-24)

Clearly, none of this has anything to do with claim 19's limitation of:

in the linear optimization program, using a real option function to determine valuation for each asset class over the period of time for a particular allocation of the funds to the asset class

In particular, it is clear that Lange's "real option analysis" is *qualitative* rather than *quantitative*. there is simply no disclosure in Lange of anything like claim 19's limitation of "using a real option function to determine valuation for each asset class over the period of time for a particular allocation of the funds to the asset class". What DBAR contingent claims offer are first, ways of hedging the risk involved in capital budget decisions and second, additional information as to the market's expectation of future prices. A set of DBAR contingent claims is certainly not the claimed "real option function".

In his advisory action of 12/20/2007, Examiner grounds his rejection as follows:

The way Lange is using the real option is not fundamentally different from the way the term is used in Applicant's claimed invention, as the real option feature is used to account for the uncertainty. Therefore, the combination of Kaplan and Lange when taken as a whole teaches the claimed invention.

The problem with this is that the limitation in question does not set forth the use of "the real option feature [] to account for the uncertainty", but rather something far more specific:

in the linear optimization program, using a real option function to determine valuation for each asset class over the period of time for a particular allocation of the funds to the asset class

- 5 Lange simply does not disclose the foregoing limitation. Because Lange does not disclose the limitation, Examiner has not made the *prima facie* case required for a rejection under 35 U.S.C. 103 and his rejection of claim 19 is without basis. As the Conferees will immediately understand, the same logic applies to the rejection of claim 25. Further, because independent claims 19 and 25 are patentable, so are all of the
10 dependent claims.

It should further be pointed out here that real options of the kind disclosed in Lange are substantially the same as the real options disclosed in the Van Mieghem reference. A rejection based on van Mieghem was successfully traversed by Applicants in their
15 response to the Office action of 04/02/2007 in this application. Van Mieghem's *Abstract*, cited in the rejection, sets forth the following:

I develop a theory of investment in multiple real assets or "resources". This theory focuses on the interaction among uncertainty, irreversibility, investment timing, and multidimensionality within the investment
20 portfolio. Using a "real options" approach, this work provides *qualitative* insights on the character of optimal investment strategies and special "hedging opportunities that arise in multi-dimensional models of real investments. (emphasis added)

- 25 Lange, like van Mieghem, uses real options in qualitative analysis rather than quantitative analysis. Consequently, the arguments made and accepted with regard to van Mieghem in Applicants' response of 6/27/2007 apply to Lange as well.

Conclusion

- 30 Applicants have demonstrated that Examiner has not made the required *prima facie* case of obviousness with regard to claims 19 and 25. Applicants consequently respectfully request that the Conferees overrule Examiner's rejection of claims 19 and 25 and either pass the application to issue or reopen prosecution. A *Notice of appeal* and a petition for a 1-month extension of time, together with the requisite fees, accompany this *Brief*.
35 Should further fees be required, please charge them to Deposit Account 501315.

Respectfully submitted,

/Gordon E. Nelson/

Attorney of record,

Gordon E. Nelson

57 Central St., P.O. Box 782

Rowley, MA, 01969,

Registration number 30,093

Voice: (978) 948-7632

Fax: (866)-723-0359

January 7, 2008

Date